

Exhibit 8

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

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THE STATE OF NEW YORK and THE CITY OF
NEW YORK,

Plaintiffs,

Case No. 1:15-cv-1136-KBF

v.

UNITED PARCEL SERVICE, INC.,

**DECLARATION OF
CHRISTOPHER ERATH**

Defendant.

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Christopher Erath declares, under penalty of perjury, pursuant to 28 U.S.C. § 1746, that the following is true and correct:

1. I am a Director of BLDS, LLC in Natick, Massachusetts. BLDS is a consulting firm specializing in the analysis of labor markets. I joined the company in 2011.
2. Prior to joining BLDS, I worked for NERA Economic Consulting from 2004-2011 where I served in various research positions from Senior Analyst to Senior Vice President.
3. I received A.B. degrees in Economics and Mathematics from Bowdoin College, and a Master's and Ph.D. in Economics from the University of Wisconsin. My major fields of study included labor economics, econometrics, and industrial organization.
4. My primary area of interest is labor economics. I have served as an expert witness in numerous matters involving damages in employment discrimination and wage and hour claims, and have also prepared extensive studies of statistical liability in employment proceedings and opined on class certification issues.

5. Using data sets as large as millions of records, actual pay data and consideration of all compensation as well as paid time off, I have produced estimates of potential losses which accurately reflect the facts of each case and opined on the consistency of such data with alleged violations.
6. I have also directed research into various antitrust issues such as damages from patent infringement and breach of contract as well as for use in regulatory prudence hearings.
7. During my professional career, I have worked on several cases where data was obtained through use of a survey, including a number while employed at NERA.
8. I was retained by the State of New York and the City of New York in connection with this lawsuit to assist in the determination of the percent of shipments sent by EExpress via UPS to addresses within New York State that contained cigarettes.
9. In connection with the assignment, I created a random sample of shipments from a spreadsheet of EExpress shipments obtained from UPS, designed a survey to be used to interview recipients of the shipments, and analyzed the results of that survey.
10. I chose a random sample because random sampling allows for inferences drawn from the sample to be generalized to the entire population. That is, when we work with a random sample, we are able to draw inferences not only for the sample of shipments but for all UPS shipments sent from EExpress.¹ Random sampling is standard practice in sampling theory.
11. I was provided with a spreadsheet listing shipments from EExpress by UPS covering the period from 9/21/2012 to 6/25/2014. During that period, a total of 11,195 shipments

¹ As noted below, because I worked with a sample, results are presented along with a confidence interval. This is similar to the familiar margin of error reported with political polls.

were sent (identified by tracking numbers) from EExpress via UPS to 896 unique addresses.

12. From this list I created a subset of 500 randomly selected shipments that covered 328 unique addresses with 1-7 shipments sent to each address.
13. To create the random sample, I used a random number function called “runiform()” available as part of the statistical software package Stata. This function provides a random number that was used to select one shipment (that is, one tracking number) at a time until 500 unique shipments were achieved.
14. I provided the list of addresses to the NYS Attorney General’s Office, and personnel there used the address and signatory information (if available) to secure a telephone number associated with the address at the time of the shipment. I then prepared a script for investigators to follow when interviewing respondents about their experiences with EExpress.
15. The goal of the project was to determine the fraction of EExpress shipments sent to New York addresses via UPS which contained cigarettes. We assumed the shipment list provided by UPS was accurate: that is, we assumed that each listed address received a package via UPS from EExpress. Consequently, the question of interest for survey respondents was simply if the package contained cigarettes.
16. However, as some time had elapsed since the packages were received, I also included questions in the survey designed to test the respondent’s memory such as the brand of cigarettes ordered.
17. Because we were working from a list of EExpress shipments obtained from UPS, the script was designed to learn the contents of that shipment. Those contacted were told at

the outset of the call that the Office of the Attorney General of New York State was researching shipping practices in the state and that they were not in any trouble.

18. The interviewer then verified that the respondent lived at the address in question on the date of the chosen shipment. Respondents were then asked if they had received a package from EExpress or any of its “doing business as” affiliates (“DBAs”).
19. If the response was yes, they were asked about the contents of the package. If the response was cigarettes, they were asked whether they ordered anything else from EExpress or its DBA. If the respondent did not recognize the company names, they were asked if they ever received a shipment of tobacco products from any company and, if so, what product (e.g. cigarettes or little cigars). In both cases, respondents who answered that they had ordered cigarettes were asked to name the brand.
20. Respondents who stated that they had not received a shipment from EExpress or a DBA or who denied receiving tobacco shipments were asked if someone else living at the address might have placed such an order. Contact information was sought for anyone so identified and that person became the new point of contact for the investigator.
21. Due to time constraints, investigators attempted to reach 235 of the random subset of 500 addresses provided. Contact was made in 52 cases. Of those cases, 20 respondents denied receiving any packages from EExpress or its DBAs or having any tobacco products shipped to them. Those respondents were discarded.
22. The remaining 32 respondents confirmed that they had received cigarette shipments. I divided those respondents into three categories.

23. The first category consisted of “clean” responses where the person identified the seller from whom they had purchased tobacco products and certified that they had not purchased any other tobacco products from that seller.
24. The second category consisted of respondents who confirmed receiving cigarettes from EExpress but: (1) were not asked if cigarettes were the only product ordered, or (2) did not know if cigarettes were the only product ordered, and (3) one case where the both cigarettes and cigars were ordered.
25. The third category consists of interviews where the investigator may have deviated from the scripted language.
26. Focusing on the first category, there were 19 responses which accounted for 30 shipments; 17 of 19 answered that they had ordered only cigarettes while the last order was for cigars. A 95 percent confidence interval around the 90 percent estimate (17 of 19) extends from 76 percent to 100%.² At the shipment level, 91 percent of shipments contained cigarettes (29 of 32), with the 95 percent confidence level extending from 81 percent to 100 percent. This means that, at the shipment level, I am 95 percent confident that the true population percentage of shipments containing cigarettes falls between 81 and 100 percent.
27. When I add the shipments in the second category where a question was omitted, the count becomes 23 of 25, or 92 percent. The 95 percent confidence interval around this estimate is between 81 and 100 percent. At the shipment level, 38 of 41 packages contained

² I obtained this confidence interval by application of the standard formula for the widely-used Bernoulli interval, namely the sample proportion (p) plus or minus 1.96 multiplied by the square root of $p(1-p)/n$, which achieves an approximation. Dr. Sabry uses the Wilson method, which is more exact, but in this instance, produces highly similar results, which I believe are also reliable.

cigarettes, and the 95 percent confidence interval around this 93 percent estimate extends from 85 percent to 100 percent.

28. Finally, adding the shipments in the third category where the investigator may not have followed the script showed 30 of 32 (94 percent) contained cigarettes, and the corresponding 95 percent confidence interval ranged from 85 percent to 100 percent. At the shipment level, 95 percent contained cigarettes (54 of 56), with a 95 percent confidence interval from 89 percent to 100 percent.

29. Consequently, I conclude that the survey establishes a very high incidence of cigarette receipt among EExpress recipients. Based on the first group, the estimate is 90 percent (confidence interval from 81 to 100), and on the first and second combined, 93 percent (confidence interval 85 to 100).

Dated: Natick, Massachusetts
August 19, 2016

_____/s/_____
Christopher Erath